

REMARKS

Claims 1-14, 16-22 and 24-25 are rejected. Claims 24-25 are objected to being dependent on a canceled claim. Claims 1 and 24 are currently amended. Claims 1-4, 16-22 and 24-25 remain in the application.

No new matter is introduced by the amendments made herein.

Claim objections

The Examiner has objected to claims 24 and 25 because of an informality in that claims 24 and 25 depend from canceled claim 23.

Claim 23 is currently amended to depend from claim 19.

Rejection of claims under 35 U.S.C. § 102

Claims 1-2, 6, 9-10, 16-17, 19-20 and 24-25 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Kubo et al. (US Patent 6,091,467), hereinafter referred to as Kubo.

Claim 1 is currently amended to recite in part "... a shielding electrode formed on the passivation layer and disposed between the source electrode and the drain electrode, wherein the shielding electrode provides voltage shielding for the region on which it is disposed."

Support for this amendment is to be found in the specification at, for example, at paragraph [118].

The shielding electrode can provide control of the voltage and electric field at the channel of a thin film transistor and thereby provide for favorable values of the turn-on voltage of the thin film transistor.

Kubo, on the other hand, is directed solely at providing improved light shielding for thin film transistor switches in an array of pixels and does not provide voltage shielding, as recited in claim 1.

Regarding claim 1, the Examiner asserts that the elements of claim 1 are disclosed in FIG. 13 in Kubo, including "... a shielding electrode (210) formed on the passivation layer (208) and disposed on a region between the source electrode (206) and the drain electrode (207)."

While the Examiner refers to element 210 in FIG. 13 in KUBO as a shielding electrode, Kubo does not refer to element 210 in FIG. 13 as a "shielding electrode" but rather

as a “light shielding film 210” which indeed it is. Kubo does not disclose or suggest that the “light shielding film 210” could be used for any purpose other than shielding a thin film transistor from light.

Therefore, Kubo fails to anticipate the present invention as claimed in claim 1 and therefore claim 1 as currently amended is allowable.

Regarding claim 6, the Examiner states that “Kubo teaches the shielding electrode comprises IZO or ITO (Col. 11 lines 13-25).”

The rejection of claim 6 fails for at least the reasons stated with regard to the parent claim 1.

Furthermore, the passage cited by the Examiner is descriptive of the manufacturing steps shown in FIG. 3A and the structure shown in FIG. 6A in Kubo. The thin film transistor shown in FIG. 6A is entirely different from that claimed in Claim 1 and in dependent claim 6. In FIG. 6A the light shielding films 13b and 15b are disposed not on the passivation layer as recited in claim 1, but rather on a transparent conductive layer (deposited in step a6 of FIG. 3A) that is used in forming source lines 3 and connection lines 5.

Furthermore, the light shielding films 13b and 15b shown in FIG. 6A do not comprise IZO or ITO as asserted by the Examiner. Rather the light shielding films 13b and 15b comprise tantalum, aluminum or the like (Kubo col. 11, lines 8-10).

Kubo states “At step a7, a metallic film formed of tantalum, aluminum or the like is formed by the sputtering method. At step 8a these films are shaped into desired patterns.” The light shielding films 13b and 15b shown in FIG. 6A are formed of “tantalum, aluminum or the like” and clearly do not comprise IZO or ITO.

Therefore applicants believe that claim 6 is not anticipated by Kubo and that claim 6 is allowable.

Regarding independent claim 9, the Examiner refers to “Description of the Related Art; Figs. 9-10, 12” as showing all the elements of independent claim 9.

Kubo does not disclose “a first thin film transistor...generating a gate signal to be applied to the gate line; a second thin film transistor including a gate electrode connected to the gate line...and a first shielding electrode disposed on the channel of the first thin film transistor.” In fact Kubo discloses only light shielding and then only light shielding for thin film transistors in the lighted portion of a display.

Applicants believe that claim is not anticipated by Kubo and that claim 9 is allowable.

Regarding claims 2 and 10, the Examiner states “Kubo teaches the shielding electrode is electrically isolated (FIG. 13).”

The rejection of claims 2 and 10 fails for at least the reasons stated with regard to the parent claims 1 and 9.

Regarding claim 16, the Examiner states “Kubo teaches a second shielding electrode disposed on the channel portions of the second thin film transistor and including the same layer as the pixel electrode (Description of the Related Art; Figs. 9-10, 12).

The rejection of claim 16 fails for at least the reasons stated with regard to parent claim 9.

Applicants believe that claim 16 is not anticipated by Kubo and that claim 16 is allowable.

Regarding claim 17, the Examiner states “Kubo teaches an insulating layer disposed between the first and the second thin film transistors and the first and second shielding electrodes.”

The rejection of claim 17 fails for at least the reason stated with regard to parent claim 9.

Applicants believe that claim 17 is not anticipated by Kubo and that claim 17 is allowable.

Regarding independent claim 19, the Examiner states that the elements of claim 19 are disclosed in Kubo in (Description of related art; Figs. 9-10, 12).

In fact Kubo does not disclose “...first thin film transistor ...generating a gate signal to be applied to the gate line;...” The only thin film transistor disclosed by Kubo is a thin film transistor that receives a gate signal from a gate driver.

Applicants believe that claim 19 is not anticipated by Kubo and that claim is allowable.

The rejection of claims 20, 24 and 25 fails for at least the reasons stated with regard to the parent claim 19.

In view of the arguments presented above, it is respectfully requested that the rejection of claims 1-2, 6, 9-10, 16-17, 19-20 and 24-25 be reconsidered and withdrawn.

LAW OFFICES OF
MacPherson, Kwok, Chen &
Held I.P.
2033 Gateway Place
Suite 400
San Jose, CA 95110
Telephone (408) 392-9520
Fax (408) 392-9262

Rejection of claims under 35 U.S.C § 103

Claims 3-5, 11-14 and 21-22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Kubo et al. (US patent 6, 091, 467) in view of Kubota et al. (JP Pub # 10-098190).

In the discussion presented above regarding the rejection of claim 1 under 35 U.S.C. § 102(b) it has been established that claim 1 is not anticipated by Kubo.

Kubota discloses a light shielding film that is located close to the silicon layer in a thin film transistor. Kubota prevents the accumulation of unwanted charge on the light shielding film by proving a conductor connecting the light shielding film to a DC voltage source.

Since the combination of Kubo taken in view Kubota does not provide any disclosure or suggestion leading to the claimed invention, claims 3-5, 11-14 and 21-22 are not unpatentable under 35 U.S.C. § 103(a).

With regard to claims 3 and 11, the Examiner states:

Regarding claims 3 & 11, as described above, Kubo substantially reads on the invention as claimed, except Kubo does not teach the shielding electrode is supplied with a predetermined voltage. Kubota teaches a shielding electrode is supplied with a predetermined voltage to prevent the accumulation of electric charge on the light-shield film [0018, 0039]. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the device taught by Kubo to supply the shielding electrode with a predetermined voltage to prevent the accumulation of electric charge on the light-shield film as taught by Kubota [0018, 0039]

The assertion that “as described above, Kubo substantially reads on the invention as claimed...” meaning that FIG. 13 in Kubo discloses all the elements of claim 1, has been shown above by applicants to be incorrect. The “light shielding film 218” in FIG. 13 is just that, it is not a “shielding electrode” as recited in claim 1 of the present application.

The Examiner further states “Kubota teaches a shielding electrode is supplied with a predetermined voltage to prevent the accumulation of electric charge on the light-shield film [0018, 0039].” In fact Kubota does not teach as claimed by the Examiner, but rather Kubota teaches a light shielding film that is supplied with a predetermined voltage to prevent the accumulation of electric charge on the light shielding film.

Applicants believe that claim 1 is not unpatentable over Kubo in view of Kubota and that claim 1 is allowable.

LAW OFFICES OF
MacPherson, Kwok, Chen &
Heid LLP
2033 Gateway Place
Suite 400
San Jose, CA 95110
Telephone: (408) 392-9320
Fax (408) 392-9262

As to claim 11, applicants have shown above that independent claim 9, the parent of claim 11 is not anticipated by Kubo, there being several elements in claim 9 that are absent in Kubo. Kubota does not disclose or suggest the elements of claim 9 that are absent in Kubo. For example, there is no first shielding electrode in either Kubo or Kubota.

Therefore claim 11 depending from claim 9 is not unpatentable over Kubo in view of Kubota and claim 11 is believed allowable.

Claims 4 and 5 depending from claim 3 and claims 12, 13 and 14 depending from claim 11 are allowable for at least the reasons stated with regard to claims 3 and 11.

With regard to claims 21 and 22, claims 21 and 22, these claims all depend from independent claim 19 which applicants have argued above is allowable and these claims are therefore allowable for at least least the reasons stated above regarding claim 19.

It is respectfully requested that, in view of the arguments presented above, the rejection of claims 3-5, 11-14 and 21-22 be reconsidered and withdrawn.

Paragraph 7 in the current office action appears to have been accidentally carried over in its entirety from the previous office and clearly requires no response.

Claims 8 and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kubo et al (US Patent 6,091,467) as evidenced by Kawasaki et al. (US Patent 6,281, 552) (col. 8 lines 44-50).

The Examiner states "Kubo teaches the passivation layer (108/208) comprises an acrylic resin which is said to be an organic insulator (col. 1 lines 60-67) as evidenced by Kawasaki (col.8 lines 44-50).

Since applicants have argued that Kubo fails to anticipate the parent claims 1 and 9 and since Kawasaki does not repair the deficiency in Kubo, the combination of Kubo and Kawasaki does not make claims 8 and 18 unpatentable.

It is respectfully requested that the rejection of claim 7 be reconsidered and withdrawn.

LAW OFFICES OF
MacPherson, Kwok, Chen &
Held LLP
2033 Gateway Place
Suite 400
San Jose, CA 95110
Telephone (408) 392-9520
Fax (408) 392-9262

Conclusion

Applicants respectfully submit that all pending claims are allowable and that the application is in condition for allowance. A Notice of Allowance for all pending claims is respectfully requested.

The Examiner is invited to call the undersigned at (408) 392-9250 with any questions regarding the above-identified application.

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Respectfully submitted,

*Derek W. Held Reg. 25,875
DWH*

Anthony G. Dervan
Patent Agent for Applicants
Reg. No. 38,676

LAW OFFICES OF
MacPherson, Kwok, Chen &
Held LLP
2033 Gateway Place
Suite 400
San Jose, CA 95110
Telephone (408) 392-9220
Fax (408) 392-9262